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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/495,899	02/02/2000	Hiroyuki Suzuki	032817-002	5436
21839	7590	08/24/2005	EXAMINER	
BUCHANAN INGERSOLL PC (INCLUDING BURNS, DOANE, SWECKER & MATHIS) POST OFFICE BOX 1404 ALEXANDRIA, VA 22313-1404			NGUYEN, MADELEINE ANH VINH	
			ART UNIT	PAPER NUMBER
			2626	

DATE MAILED: 08/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/495,899

Applicant(s)

SUZUKI ET AL.

Examiner

Madeleine AV Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 March 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 7-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-5 and 11-21 is/are allowed.
- 6) ☒ Claim(s) 7-9 is/are rejected.
- 7) ☒ Claim(s) 10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed ON March 10, 2005 have been fully considered but they are not persuasive.

Applicant remarks for claims 7-10 that there is no description about color deviation in the primary scanning direction and accordingly, Kim does not teach or suggest the subject matter of claims 7-10.

It is noted that in the Background of the Invention, Kim teaches that “the interval between the sensors maintains the relationship between a multiple of an integer of the width and the length of each light receiving element which are determined by a resolution in the main scan direction provided by the sensors.... In a document image reading apparatus, the resolutions in the main scan and sub-scan directions are arbitrarily and finely adjusted so that various magnification conversions are possible according to the relationship with an output apparatus.” (col. 2, lines 27-47). Furthermore, in the Detailed Description of the Invention, Kim teaches “the magnification transformation is required to be processed by an arbitrary variable magnification, and a soft image process should be enabled by independently performing the variable magnifications in the main scanning direction and the sub-scanning direction...” (col. 8, lines 6-19). Thus, there is the color deviation in both main-scanning and sub-scanning directions, and correction for a misregistration of the colors is done in both the main-scanning and sub-scanning directions. In addition, the width of the sensor discussed in the invention is the length of the sensor in the main scan direction (col. 6, line 57 – col. 7, line 8).

Claim Rejections - 35 USC § 103

2. Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim (US Patent No. 5,859,712).

Concerning claim 7, Kim discloses a sensor disposed linearly in a primary scanning direction, the sensor reading an image that has been decomposed into plural colors; an optical system for projecting light from the image onto the sensor; and a correction portion for correcting mis-registration of the color due to a chromatic aberration of the optical system, the correction portion performing a mis-registration correction for each of plural areas divided in the primary scanning direction.

Kim does not specifically teach the correction of the colors in the primary scanning direction. However, in the Background of the Invention, Kim teaches that “the interval between the sensors maintains the relationship between a multiple of an integer of the width and the length of each light receiving element which are determined by a resolution in the main scan direction provided by the sensors.... In a document image reading apparatus, the resolutions in the main scan and sub-scan directions are arbitrarily and finely adjusted so that various magnification conversions are possible according to the relationship with an output apparatus.” (col. 2, lines 27-47). Thus, it is a matter of well known in the prior art to consider the correction of a mis-registration of the colors is done in the primary scanning direction. Furthermore, in the Detailed Description of the Invention, Kim teaches “the magnification transformation is required to be processed by an arbitrary variable magnification, and a soft image process should be enabled by independently performing the variable magnifications in the main scanning direction and the sub-scanning direction...” (col. 8, lines 6-19). Thus, there is the color deviation in both

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main-scanning and sub-scanning directions, and correction for a misregistration of the colors is done in both the main-scanning and sub-scanning directions. In addition, the width of the sensor discussed in the invention is the length of the sensor in the main scan direction (col. 6, line 57 – col. 7, line 8). It would have been obvious to one skilled in the art at the time the invention was made to understand that Kim teaches the correction of a mis-registration of the colors in the primary scanning direction due to a chromatic aberration since the mis-registration of the colors cannot be corrected only in the sub-scanning direction due to the fact that the scanning of the image data is done in the primary and sub-scanning directions while the well known prior art teaches that “means for adaptively correcting a registration error in accordance with the arbitrary magnification conversion in the main scan direction actually becomes very essential and necessary for obtaining a high quality image.” (col. 2, lines 53–57).

Concerning claims 8-9, Kim further teaches that the sensor includes line sensors red, green and blue colors arranged by a predetermined pitch in a secondary scanning direction (Figs. 3, 7; col. 5, line 51 – col. 6, line 4); a predetermined test image is read according to a characteristic of a machine coupled to the image processing apparatus and wherein information for the correction for each area is obtained from the image data (Figs. 7, 8, 11; col. 6, line 19 – col. 8, line 28).

Allowable Subject Matter

3. Claims 1-5, 11-21 are allowed.

The following is an Examiner's Statement of Reasons for Allowance:

Claims 1-5 are allowable over the prior art of record because the Examiner found neither prior art cited in its entirety, nor based on the prior art, found any motivation to combine any of the said prior art which teaches an image processing apparatus comprising a black fine line detection portion for detecting a black fine line included in image data wherein the fractional correction portion is enabled if a width of the black fine line is greater than a predetermined value and wherein the fractional correction portion is disabled if the width of the black fine line is equal or less than the predetermined value on the basis of an output signal of the black fine line detection portion.

Claims 11-12, 20-21 are allowable over the prior art of record because the Examiner found neither prior art cited in its entirety, nor based on the prior art, found any motivation to combine any of the said prior art which teaches an image processing apparatus comprising a plurality of interline correction portions wherein each of the interline correction portions uses a different reference color for correcting a misregistration among the element arrays of the image sensor in the secondary scanning direction and each of the interline correction portions produces plural sets of image data.

Claims 13-19 are allowable over the prior art of record because the Examiner found neither prior art cited in its entirety, nor based on the prior art, found any motivation to combine any of the said prior art which teaches a color image processing apparatus comprising a density correction portion for performing correction by increasing a density of image data of at least one wavelength component among image data of plural wavelength components that constitute a present pixel when the present pixel is on a fine line on the basis of a signal from the fine line

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decision portion so as to reduce a difference between densities of image data of the plural wavelength components that constitute the present pixels.

4. Claim 10 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: claim 1 is allowable over the prior art of record because the Examiner found neither prior art cited in its entirety, nor based on the prior art, found any motivation to combine any of the said prior art which teaches an image processing apparatus as claimed in claims 7-9 wherein the test image is a ladder chart in which black lines are arranged by a predetermined pitch in the primary scanning direction, a position shift among barycenters of the obtained red, green and blue image data is calculated and boundaries of the areas and correction coefficients for the areas are obtained as information for correction for each area in accordance with a distribution of the position shift among the barycenters of the red, green and blue image data in the primary scanning direction.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO**

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MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Madeleine AV Nguyen whose telephone number is 571 272-7466. The examiner can normally be reached on Monday, Tuesday, Thursday 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kimberly A. Williams can be reached on 571 272-7471. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Madeleine AV Nguyen
Primary Examiner
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August 22, 2005